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Awareness Level and Factors Affecting Intention of Penang Construction Industry Toward Green Building Development

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Abstract

Purpose *– This study has identified the awareness level and factors that affecting the trend of practicing green in Pulau Pinang construction field. The participating firms are from developer background as these organizations are the main influencer to the industry. Property developers are the first stakeholder who initiate the construction project which means they are playing crucial roles in encouraging green practices in construction industry.*

Design/methodology/approach *– First, an extensive literature review is conducted to identify the awareness level and factors that affecting the awareness level. Then a qualitative approach has been taken to continue the study by collecting opinions from professionals from the industry to verify the genuineness of data collected from literature review.*

Findings *– From collected data, the awareness level of construction industry in Penang is still improvable as most of the developer notice the important of green practices but they are not practicing green due to several reasons such as financial problem, lacking of expertise and stakeholders do not have sufficient intention to initiate green practices in construction projects.*

Research limitations/implications *– This paper main objective is to identify the awareness level of Penang construction industry. Factors that affecting the awareness level are collected from influencing developers in Penang construction industry but not every developer has intention to be part of the study. The results will aid practitioners to increase their awareness level in green and participate in the trend of green.*

Originality/value *– The findings in this study will help interested organizations in construction green practices to improve their awareness level and successful implementation for green construction projects.*

Keywords *Green practices, Green Building development, Awareness level, Construction Industry*

1.0. Introduction

Recently, the world has full of competition in business while the environmental issues have become one of the global issue that need to be attended as multiple environmental and socio-economic problems arise from irresponsible properties development (Fornasiero et al., 2016). The world has caused over 2 trillion dollars of negative impacts on the social and environmental per annual and construction industry has no exception (Hohensee, 2013). According to Ding (2008), construction industry majorly cause the environmental pollution while country such as Malaysia which is undergoing rapid development over sixty years has caused many environmental problems that arise from the construction activities that needed to be solved quickly (Hezri & Nordin, 2006). This is because the awareness level and knowledge towards green building is still low in construction industry.

Environmental problems such as untreated and hazardous rubbishes are disposed without management, air and water pollution and heat island caused by deforestation needed to be solved

quickly (Ramakreshnan et al., 2018). Besides that, the greenhouse gases emissions due to construction activities has become the primary factors that causing the global warming and climate change (Geng et al., 2017). To solve these problems, practicing green in construction has been proven as the most effective approach that able to enforce environmental responsible during the construction activities (Son et al., 2011). Therefore, green practices in construction projects have become essential and vital to mitigate the environmental problems in haste. However, the awareness level in Penang is still improvable and factors that can affect the awareness level should be utilised to improve the awareness level to acceptable standard.

In this case, the implementation of green building will enhance the construction industry performances and increase the productivity and quality of products. However, there are still low number of construction company are implementing green initiative in buildings construction. According to Wang et al. (2016), awareness level of construction industry toward the green building is still improvable. There are several factors that affecting the awareness level:

i. Lacking of knowledge and comprehension on the green initiave and concept (Hwang & Ng, 2013)
ii. The complexity of operating the green technology and machinery (Scherer et al., 2013)
iii. Stakeholders and clients do not have the intention to adopt the new technology (Berardi, 2013)
iv. Incapable of financial capability in small and medium enterprise (SMEs) (Zhang et al., 2018)
v. Lacking of awareness toward the strengths of green building (Chou et al., 2012)

The statements above show the common consensus perspectives that impede the implementation of green buildings (Serpell et al., 2013). According to Häkkinen and Belloni (2011), lack of awareness towards sustainability also one of the impediment that restrict the green building development. Besides, Mohammad (2013) has stated that most of the problems are because of the stakeholders in construction firm are lacking of driving motion in investing the adoption of green initiative in buildings. This is because there is lack of convincing testimony to prove the benefits of green building development towards stakeholders. According to Ametepey (2015), there are several cases showed that the stakeholders admitted that they are not aware to the sustainable practices compared to their benefits.

To solve the environmental issues that happening surrounding us in Malaysia due to the rapid development activities, the current awareness level should be identified as high awareness level in environmental issues will enhance the green building development (Zhu et al., 2013). Stakeholders must have awareness towards green as they are important in making decision of the implementation of green building in Pulau Pinang. This is because the awareness level tends to become low if no adequate actions taken to encourage or inspire the construction companies. Therefore, it is vitally to conduct a research to identify current awareness level of Penang construction industry and potential factors that influencing the awareness level in green building construction.

2.0. Awareness Level of Construction Industry Toward Green Building

There are difficulties to the construction firm that has no any basic and knowledge towards the green building to implement the sustainable practices due to the green technologies are complicated and require technical knowledge to manipulate it (Hwang & Ng, 2013; Nordin et al., 2017). Besides, most of the parties are not intended to adopt the green building initiatives as they feel that it is waste of time to send the workers to workshop and training to learn the green technology and knowledge. There will be a hazard to stakeholders if the workers are not able to execute the knowledge learned into their works and this will be waste of money and time of company.

As mentioned by AlSanad (2015), the construction stakeholders' awareness level and knowledge of green concept which related to the practice of green building still have plenty of potential improvement. Based on the research that has been done by AlSanad (2015), there are 62.70% of

construction firm have low to moderate knowledge about the green building and green technology. This proof that majority of the corporate in industry are not aware of the importance of green knowledge and related authorities are required to give more efforts in encouraging the improvement in this aspect so that the improvement in green construction can be expected. The figure 1 below shows the percentage of the level of knowledge and comprehension on green building development.

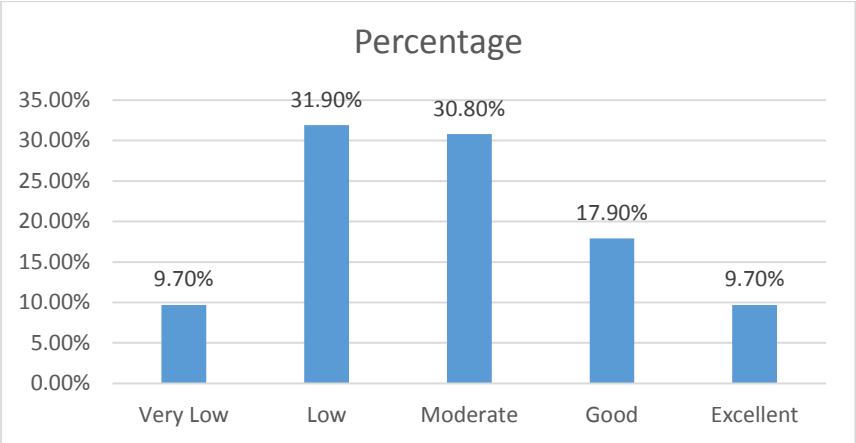

Figure 1: Percentage of construction firm with green knowledge

Base on the figure, it shows that there are still insufficient of knowledge among the construction firm towards concept of green building and green technology (Hwang & Ng, 2013). Therefore, they are not capable to adopt the new technology into their construction projects due to they have no any professionals or expert technical workers to control and operate the technology and machinery (Samari, 2013). The construction firm need to do improvement to make sure they are able to follow the trend and regulation to implement the green building in their projects so that they can keep updated and able to keep surviving.

Green knowledge is essentially vital to implement green technology in construction industry as without this knowledge, the company will not be competent enough to win the project award (Kubba, 2010). However, results from researches show that the number of professional in the industry who are capable to handle green building and technologies to complete the challenge still increasable (Häkkinen & Belloni, 2011). The construction industry is complicated and complex which built up from different players that have different requirement and thought who will need to cooperate and collaborate as the construction project team to complete the project objectives within the allocate time and budget with promised quality of works.

Improving the current awareness level of stakeholders in Penang construction industry is essential and immediate action must be taken. Development in Penang has grown rapidly in the last 10 years and this has severe affect the balance of ecosystem (Dermawan, 2017). By improving the awareness level on construction stakeholders, the environmental problems can be greatly reduced as more developers will practice green practices (Kauppi, 2013). Therefore, factors that can hasten the improvement of awareness level should be identified and tackle quickly to obtain immediate effect on green development in Penang.

Public Awareness

To complete the green and sustainable properties development, cooperation from all related stakeholders is required start from the initial stage where the design is produced until the completion of the project where the project management team is take over on construction (Umar & Khamidi, 2012). Every stakeholder must be willing to adopt new construction method, products and ideas in order to achieve green (Ofori, 2000). So, the green building development can be more popular and accepted by construction industry. This might improve the potential of green construction development. Recently, low public awareness become the biggest barrier towards green building development. This shows that

the awareness of implementing green building still needs support. Government and authority who is responsible for this must create the supporting force through the enforcement of policies and causes.

Besides, the public awareness level can be improved by giving guidance and education which will directly resulted in the increase in supporting force from the public but currently there is still lack of complete evidence that shows the positive relationship of green awareness level and support from the public toward green (Umar & Khamidi, 2012). Therefore, the publics crucially impact the green building development into another threshold in new era.

Construction industry is not a single party game but it emphasizes on the cooperation and collaboration of every single related parties in the construction supply chain (Sreejith & Vinaya, 2017). Effort from a single party will not make the green practices success but willingness of each participant to contribute in green building development will. Besides, the awareness level of the public will also severely affect the motivation of construction industry to participate in green development.

Environmental Awareness

Environmental issue is very important because it includes all living objects and non-living objects. All the people in the world use the same natural resources such as sunlight, water, air, atmosphere and land (includes all minerals) (Flammer, 2013). The traditional development method may create environmental issues. Therefore, construction industry must aware to the negative impacts of construction activities. However, the environmental awareness among the small and medium enterprise (SMEs) is still low due to the companies are not able to adopt the sustainable technology (Rashid, Spreckelmeyer, & J. Angrisano, 2012).

Compare to small and medium enterprise, large construction company will be more aware to the condition of environment and willing to invest in the sustainable technology (Ghobakhloo, 2012). This is because the large company has the extra capital to adopt the new technology to enhance their position in the market. By increasing the awareness, the company that involve in the green building development and achieve the best performance can increase their reputation and have a higher standing with the public. Besides, large companies are able to send their workers to workshop and training to learn the new knowledge about the green practices and technology compared to the SMEs (Vijayvargy et al., 2017).

The environment in Malaysia is getting worse in these few years and as the consequence, public awareness towards environmental issue is increasing year by year. So there is necessary to protect the quality of environment and the green building development can help in decreasing the environmental pollution. The construction company must take their first step to make changes and practice green in their construction projects.

Economic Awareness

The construction industry like developers, contractors and sub-contractors are focusing more on earning money and maximizing profit for their companies, so they will measure the benefits that can obtain after make the decision to implement green building in construction projects. Most of them concern about the initial cost which followed by the sequential operational cost after adopting green building in their projects. This is importance due to the price of practicing green initiatives are think to be costly and eventually increase their financial burden and they might face the risk of loss of their firm in the future (Chegut et al., 2015). Therefore, government severely impact on encourage the construction industry to adopt the green practices in the construction projects by giving incentives to the construction industry (Chan et al., 2017).

Green products can be understood as products that are not harmful, natural, can be recycled/reusable and not causing pollution to the environment (Peshwe & Gelda, 2012). Price will be the first consideration for the customers when introducing the green products to them as they will compare the price and benefits that they will get after purchase the products (D'Souza et al., 2006). According to Mohd Suki (2013) research, consumers in Thailand, Malaysia and Korea willing to pay more for green products, but majority of the public are refusing to practice so.

Undeniable that the initial cost of adopting green practices in construction industry but the scarification at the early stage is worth the price and value. The benefits can be seen in long term practice and implementation as the overall cost of the equipment and training given will be diluted as the time pass. Mohd Suki (2013) said that nowadays, more and more parties are willing to pay more to get environmental friendly services and products that can improve their social performances as their brand and reputation can gain more attention in the public which might bring more economic opportunities

Regulatory Awareness

The government must realize that the negative impacts that caused by the method of construction to environment nowadays and set the law and regulatory to make sure the method of construction is follow the rule (Kamar & Hamid, 2012). This action will encourage the construction industry to consider green initiatives in their projects. The roles of the government is very important to help and lead in encouraging the construction industry to implement green building (Zhang et al., 2013). If the regulatory awareness of the government is low, it will cause low enforcement of green activities in construction industry as there is no provision to the construction projects to adopt green technology and practices in the construction projects. Therefore, the related authorities have become the main player in pushing the construction of green buildings in Penang state.

DOE (Department of Environmental) need to control and do their parts to prevent and control the pollution in the country through the Environmental Quality Act 1974 and its subsidiary legislation (Badgie et al., 2012). This is to ensure the sustainability of environment. With the regulation that made by government, the construction industry has the opportunity to understand the policies, tools and development in environmental management (Samari, 2013). This will help to encourage the construction company to construct green buildings in their projects.

Local authorities and government are playing crucial roles in creating a better environment to citizens and to make this comes true, efforts on ensuring every single development is carried out within the standards and regulations should be done. These specialize departments must do frequent checking on construction development and penalize those who caught disobeying the laws and regulations.

Factors that can Increase the Intention of Construction Industry Towards Green Development

Nowadays, green practices are very important to reduce the negative impact that created by construction activities. Therefore, all the parties involve such as the government and private agencies must have the awareness to adopt green practices in construction projects. Currently, Construction Industry Development Board (CIDB) are promoting the important of sustainable practices by conducting GBI and MYCREST to increase the awareness level in the construction industry.

Next, green building has gain popularity due to the increasing awareness level in implementing sustainable construction which will mitigate the application of resources and improve the environmental conditions (Robichaud & Anantatmula, 2010). However, the intention of adopting green practices in Malaysia construction industry is still low (Martusa, 2013). Therefore, the government and private agencies must cooperate to create the law and regulations to increase the intention of construction industry (Dator, 2010).

Besides, the clients are more focus on energy efficiency, protection of natural resources, focus of environmental friendly, design concept, construction method of building to mitigate the environmental issues (Chau, 2010). According to Liu (2010), if construction industry keeps practicing green practices and using green technologies in construction projects, it can lead to increase the experience in green development and building labelled as "green" (Liu, 2010). Construction industry is encouraged to apply and practice this way in the process of construction works when there is requirements for green development (Wu & Low, 2010).

The construction industry is encouraged to implement green building in their construction projects by giving government incentives, societal pressure, training and workshop to obtain the knowledge (Rahman & Sadeghpour, 2010). Nowadays, sustainable development is playing crucial parts in the market and it is getting more and more concern and attention by people (Sobin, 2010). However,

there are still some stakeholders and clients refuse to adopt the green development as they not willing to increase their financial burden while affecting their current productivity. Thus, the solutions of long-term cost saving in green development have been identified, recognized and developed to aid in green buildings implementation and discussed below.

Award and Recognition

Award and recognition will be an attractive driver to increase the intention of corporates towards the implementation of green initiatives as the developers able to enhance corporate reputation and increase competitiveness in the market (Sreejith & Vinaya, 2017). By implementing green building in their projects, they can get certification and recognition from the certifier like GBI and MyCREST which created by CIDB. The developers that obtain the certificate can proof to their stakeholders and clients that they have achieve the environmental requirement in their products and this can be selling point to promote their end products (Bertrand & North, 2010).

Besides, the recognition from local authority and the certifier can help the developer to increase their reputation and mark their achievement in new field. This can help the developers to build up their reputation and attract more investors and stakeholders to invest in their construction projects in order to increase their revenue (Shubham & Charan, 2018). Therefore, awards and recognition can be the drivers that attract the intention of developers to construct green buildings and corporates that have obtain the award and recognition will have the motion to construct more green building in the future.

Reputation of an organization is important as public will take higher reputation organizations as their preferences when purchasing house and property. This is obvious as end buyers can obtain not only high quality house and property but also manage to fulfil their self-esteem in participating in green development. End buyers will tend to participate in current trend which emphasizing on green development and environmental friendly.

Financial

Incentives are one of the factors that can draw the intention of construction industry to implement green building as monetary incentive can fill the fund vacancies of the company to invest in green development. Government that provide incentives in the form of tax credits, fee reduction and grants can help to encourage the developers to fulfil the sustainability requirement (Zeng et al., 2017). This method for sure will be the motivation to the developers to involve in the sustainable construction and increase the demand for green technologies.

New technology, machineries and materials are needed to start a green building development and this need a lot of money to invest on it. However, some of the developers will worry about the reduction of revenue and profit after implement the sustainable development (Abidin, 2010). Besides, some of them will face the problem of insufficient of capital due to the high initial cost of the project, high consultant fees and the expensive materials and machineries (Häkkinen & Belloni, 2011). Therefore, the monetary incentive will help them to cover the spending and increase their capability to construct a green building.

The final objective on an organization is maximizing their profits. If an organization cannot afford the high initial cost in green building development, every subsequent step will remain dream. Therefore, by giving adequate and sufficient incentive to organizations that have qualification and intention to implement green buildings is essential as they can lead the green building development in the market and soon make it a trend that can be followed and referred by others.

Market Demand

Awareness level of the public has raised over the years and this cause the market demand on green buildings increased (Shubham & Charan, 2018). The market demand will directly affect the decision of developers on adoption of green initiatives in their projects. If there are clients that request for the green building, developers for sure will find the way to fulfil the requirement of clients as they are the buyers to the end product (Sreejith & Vinaya, 2017). Most of the developers are concern about

their revenue and profits earn in the end and this will cause them to ignore the needs for sustainable development. Therefore, the demand from clients towards green building will push the developers to develop green building.

Besides, green building needs long term to achieve break even to the owner so the developers maybe attracted by long term operational savings to operate the building and lease it to others. However, its benefits are outstanding and attractive to those who aim for reputation and branding image. Therefore, it can push them to face the requirement of markets and adopt green concept in their projects (Chan et al., 2009).

The market demand is severely affected by the public awareness level. When public is concern about the important of environmental issues in housing, construction industry will take immediate actions in order to make their development outstanding. Based on the hierarchy, clients and developers are playing vital characters in encouraging the implementation of green buildings as trend in Penang as they have the power and rights to do so (Robin & Poon, 2009).

Corporate Social Responsibility

Construction corporates have the obligation to participate in corporate social responsibility event to contribute back to the society (Charles J Kibert, 2016). More affordable green buildings, environmental friendly construction practices and green development should be carried out by large developers to lead the whole construction industry towards greener tomorrow. When more and more developers are practicing green practices, it will become a consensus guideline among the field and drive the demand on producing green buildings that can reduce the pollution and increase the energy efficiency to alleviate the environmental issues.

In construction industry, property developers must realize that they have the obligation to protect the environment so this is the chance for them to make the changes from conventional method to sustainability. The developers must observe and figure out the needs of society and environment and make amendment to the construction method nowadays by adopting green method and reduce the using of harmful construction activities that will affect the quality of environment (Kibert & Charles, 2016). This not only can increase the quality of products and also the quality of environment.

3.0. Research Methodology

Based on Yin (2014), qualitative method is suitable for this study as the contemporaneity of the content, the research question and the impossibility of manipulating behaviours. Besides, this study is descriptive as it aims to investigate the awareness level and the factors affecting the intention of Penang construction industry toward green building development. Thus, qualitative research is adopted in this study. Approaches such as in-depth interviews and observation on the actual activities are the remedies to solve the information deficits that exist in quantitative research method (Foo et al., 2018). Qualitative method which consist of literature review from existing books, journals and articles and primary data by interviewing the experience and big developers in Penang area will be adopted in the study.

Influencing developers in Penang state are chosen to become the respondent in this study. This is due to developers are believed to be the most influencing party in initiating green building practices (Chun et al., 2015). Property developers have the final decision on the practices used in the construction projects as they are the person that initiate the construction projects in a typical construction supply chain (Sreejith & Vinaya, 2017). Therefore, top management who as the decision makers in property developer firms have become the main influencers in the green construction practices implementation and adoption in Penang's construction industry (Hoejmose et al., 2012).

4.0. Results and Findings

4.1. Awareness Level of Penang Construction Industry towards Implementation of Green Building

The figure below shows that the awareness level of Penang construction industry is still improvable. 3 respondents have high awareness level towards the green development as their company

have implemented green building in their construction projects. While 8 respondents who do not implement green building in their company has moderate awareness level towards the green development and 2 respondents have low awareness level. Although there are 10 respondents' company do not adopt green building in their company, most of them are aware that the current construction method has bring negative effects to the environment and they have the intention to make changes in the future. This shows that improvement can be made if there are encouragement from authority.

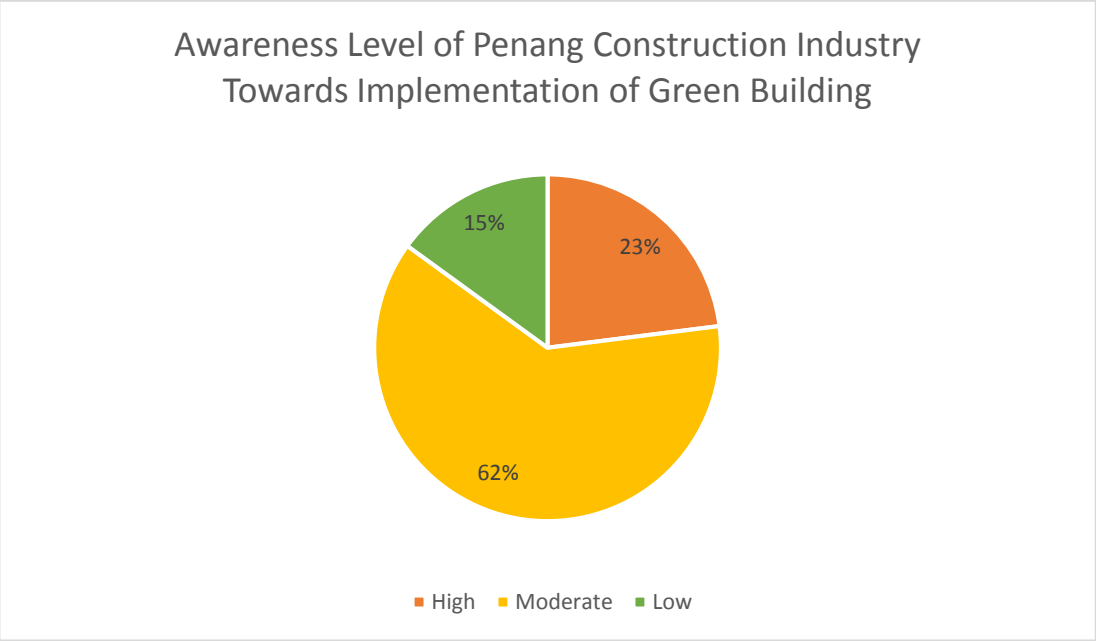

Figure 2: Awareness Level of Penang Construction Industry towards Implementation of Green Building

However, there are respondents that has an insufficient awareness level towards the implementation of green building into construction project. Based on the results from the study, 15% of the respondents have low awareness level towards the adoption of green building. From respondent's perspectives, the decision to adopt green initiative is depending on its influence on the construction cost. If the cost to implement green building is too high, his company will not consider to implement it due to his company do not allocate any budget for the implementation of green building. Besides, the respondent indicated that there are no suppliers to supply the materials need for the green building development. They need to explore the new market to get the materials needed or import the materials from overseas and this will increase the expenses and operating cost.

Furthermore, 62% of the respondents have moderate awareness level towards green building implementation. However, the adoption of green buildings in Penang state is still low. This is due to the lacking of experienced practitioners. This will create the barriers and obstacles to them to learn about green building development. Besides, there is still lack of green technology adoption in construction industry especially in Penang. This caused lacking in guidance for them to do research and development about green buildings and eventually companies do not have the reference to carry out research and development (R&D) about green building and figure out the risk management. Therefore, the respondent stated that his company is not willing to take the risk to implement green initiatives as there is no any solution if any problem occurs.

Lastly, only 23% of the respondents are highly aware of the importance of green building implementation in construction industry. Therefore, motivation such as incentive and training can be given to them to help these people to implement green while the rest of 15% respondents who do not have intention to implement green must be encouraged and educated about the importance of green practices toward environment.

4.2. Factors to Improve Intention Towards Green Building Development

The collected data shows minority of respondents implemented green building development, but majority are not doing so. Thus, actions should be taken by related parties such as authorities, agencies and institutions to push the existing awareness level higher. To improve green building development, several factors that have been identified from the study can be utilised. The identified factors are listed below.

1. Current market demand towards green buildings
2. Upstream stakeholders' pressure in towards downstream stakeholders
3. Intention to improve social performance such as brand of company
4. Pressure and motivation from government and local authorities
5. Incentive and training from top management to staffs
6. Normative isomorphism from tertiary education background staffs

The intention of Penang construction industry towards the implementation of green building can be classified into three categories which are economic, environmental and social. All of these companies are concerned about the profits and benefits that they can earn and they will question the investment invested into the green building development which can increase the profits. After the interview session with respondents, most of them think that implementation of green building into construction projects can save money in the future. They mention that although there will be a huge amount of spending in the initial stage, they can still earn profits in long term. This is because the green building development is a long term profit investment which needs longer time to achieve the breakeven point between the total expenses and profit. From the results, it is shown that the awareness level of Penang construction stakeholders is still located within acceptable range.

According to the respondents, green building development will decrease the operational costs and this will save a lot of money during operating period. Green building will alleviate the consumption of electricity and it is energy efficiency. For example, the lighting system and energy efficiency building envelope can reduce the cooling capacity in the building and this can reduce the project budget. This can also help in saving the energy and electricity used during the operation period. Therefore, the respondents declared that if there is a chance, they are willing to implement green building into projects.

Some of them declared that they have the intention to adopt green development in construction projects if they are policy maker. They have mentioned that they have the responsibility to make the quality of environment better. Therefore, they are willing to find the way to replace the conventional construction method that already destroy the environment and ecosystem. Hence, green building development is the ideal solution for them to make changes. Besides, there are few of the respondents' company have set the goal and objective to "go green" and they have to achieve the objective and goals by implementing green building.

Market demand on green buildings is influencing the intention and desire of the respondents to adopt the green building development. The awareness levee the public have been raised since recent years and they have high requirement on the green building (Shubham & Charan, 2018). If the demand to the green building increase, they need to fulfil the requirement of clients to construct green building where the purpose of environmental sustainability can be achieved. The competition among the developers will also improve the quality which indirectly might reduce the implementation cost as well. The advent of opponents will increase their competency to construct a green building with high quality and get recognition from public about their contribution and effort on fulfilling their requirements.

Besides, upstream stakeholders' (clients and end users) influence will increase the intention green buildings implementation. Based on respondents' perspective, they will execute what their clients order for. So if their clients request them to construct a green building, they will follow the instruction to develop green building. This has shown that there is a great influence of clients to the developers in the new construction method. The respondents will have the intention to implement green building if there is any requirement from clients sue to they need to fulfil all the requirements of clients to make sure they can earn the profits.

There are respondents willing to implement green building into construction projects with the target to increase reputation of their company. They declared that their companies can drive the market and enhance the image of their companies by implement the green building. If the final products can reach the satisfaction of clients, their companies' reputation can be greatly improved. Some of the respondents said that they will have the intention to implement green building if their contribution will be appreciating by government or public. Award and recognition are the driving force that will encourage them to adopt green technology.

Government and local authority are also one of the motivations. The aspiration towards the implementation of green building will affect by the attitude of government and local authority. Therefore, seminar and exhibition should be organised frequently to spread the news and information on green innovation to the construction industry and public like Archidex. Archidex is a platform to introduce and promote the new technology that can be applied in construction activities. This can increase the cognitive of construction industry and public to the green building. The respondents stated that they will have the intention to implement green building if the authorities are in great assist of the encouragement and promotion of implementing green building. Besides, laws and regulations must be set by the regulators to enforce construction projects to implement green building concept. According to the respondents, they will have the motivation and responsibility to implement green building when there are enforcement of laws and regulations.

In addition, the respondents also indicated that incentive and training will encourage their participation in constricting green building as they can save cost in training their staffs. According to the respondents, sparing time to attend the green education and training is also considered as spending money as in construction sector time is equal to money. They mentioned that assigning their staffs to attend green education and training must be worth due to the time has been spent on other places for other intention instead of rushing the project schedule. The project triple constraints should be referred in this issue to examine the value of outcome and the effect of the scarification made on the project. Therefore, the incentive will increase their intention to implement green building due to the incentive can help them to cover the expenses.

The normative isomorphism inside an organization can play significant effect especially when most of the top management are consist of tertiary education holders who emphasize on green development. New generation with tertiary education certifications are more prefer the green importance in practices. Despite the intention of these new generation, older staffs have stopped company this mind set from further development. The limited influencing power of new generation has cause the slow implementation of green practices at site. However, it is believed that this situation will become better when more and more younger growth up and take over the upper management position. This might be solely imagination as the great power comes the great responsibility, upper management has their own consideration to ensure the firm manage to survive.

From the study, it is quite peculiar that Penang construction industry has higher awareness level than what it shown from the literature review that low numbers of respondents are aware to the importance of green building. Majority of the respondents have high intention towards the implementation of green building in construction projects and they have the intention to make changes from the conventional method to the modern method which emphasize on green concept. They denoted that this is a must to make changes to protect the condition of environment from getting worse.

5.0. Conclusion

The impact of practicing green buildings has been proved to bring positive impacts but cooperation and collaboration from every related party is vital to ensure the success rate of the implementation. Thus, it is significant that implementing green practices in construction industry is essential due to the environmental issues have significantly affected human being habitats. Furthermore, there are various stakeholders in the field such as government who is the regulatory maker and customers who are the final purchasers are growingly pay attention on the environment. These factors are driving the important of improving the awareness level and implementation of green buildings in Penang, Malaysia.

The study results show the implementation of green buildings in Penang is improvable, as majority of the developers in Penang are acknowledging the existence of green practices in building but due to several factors such as financial difficulties, lacking of expertise and insufficient of support from stakeholders are obstructing the adoption and implementation of green practices. Every organization is unique and each of them have different approach to manage their organizations. Therefore, after these factors are identified, it is much more convenient for interested parties to figure out the most suitable way for them to comply the expectation of raising environmental concern from customers and straight reinforcement of regulations from regulatory bodies.

6.0. Acknowledgement

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